FACSIMILE SYSTEM CAPABLE OF CONDUCTING SCAN AND FACSIMILE DIRECTLY DESCRIPTION

BACKGROUND OF THE INVENTION

A. Field of the Invention

The present invention generally relates to a scanning system capable of facsimiling the scanned image directly to other facsimile machines. The system is based on an optical scanning machine combined with a facsimile module. The system is therefore able to scan and facsimile the scanned image without using a personal computer or activating any application programs previously installed in a personal computer.

B. Description of the Prior Art

In a conventional facsimile operation, a telephone line 10 must be set between two facsimile machines 11a, 11b, as shown in Figure 1. Since computer technologies are advanced, another type of facsimile utilization is shown in Figure 2. A computer 12 (or a personal computer) , an optical scanning device 13 and a driver and a facsimile module installed in the computer 12 are utilized. The integrated system of the optical scanning device 13 and the computer 12 may transmit facsimiles through Internet connection, MODEM, ISDN or other communication gateways to complete the facsimile transaction.

The general steps of the above-mentioned example are starting a facsimile program (such as the popular WinFax Pro), activating an image editing program (such as PhotEdit), acquiring the image from a scanner, and sending the acquired image to others via a facsimile MODEM. In this instance, each step is needed in order to complete the facsimile process. Besides, the user is asked to get the facsimile programs and install it and the dedicated driver for the scanner to perform the

facsimile job. The burden of the conventional process further includes the installation of the hardware and the software of the MODEM, the network card (such as NE2000), the communication gateway (such as the Internet MODEM, ISDN or ADSL) in order complete the final facsimile process in communication.

Though there is a scanner in the market having a facsimile button. The user would press down the facsimile button to activate a facsimile program previously installed in the computer to start facsimiles. This kind of device still needs a computer, a facsimile program, an image editing program and a driver for the scanner to perform the facsimile job. The user also has to install the needed programs before conducting the first facsimile. The installation includes many setups, parameters, and tests. The usage is complicated and not easy for a new user.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a scanning system capable of directly conducting the facsimile. By help of a predetermined communication gateway, the present invention is able to scan a document and send a facsimile of the document without opening any application programs, when the user pushes the facsimile button.

It is another object of the present invention to provide a facsimile module which is able to complete the integrated processes among the computer, the optical scanning device and the communication gateway. When the user installs the facsimile module in a computer, the facsimile module is able to drive the optical scanning device and the computer to conduct the facsimile request completely.

The facsimile system includes a computer (a personal computer or a notebook computer), an optical scanning device with an implemented facsimile button, a facsimile module capable of driving the optical scanning device, Internet communication, MODEM, ISDN or ADSL protocols. When the facsimile module is installed to the computer, the facsimile module is able to determine automatically or

by previous setup the communication gateway, in order to communicate with another computer supporting the determined communication gateway.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, aspects and advantages will be better understood from the following detailed description of a preferred embodiment of the invention with reference to the drawings, in which:

Figure 1 shows a prior known facsimile machine conducting a facsimile communication to another facsimile machine;

Figure 2 depicts a prior known integration of a computer and a scanner;

Figure 3 shows a functional block diagram of a facsimile system according to an embodiment of the present invention;

Figure 4 depicts a flow chart of operation according to an embodiment of the present invention;

Figure 5 shows the steps to set up a communication gateway according to an embodiment; and

Figure 6 shows a functioned block diagram of a second embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A preferred embodiment of the invention is described below. This embodiment is merely exemplary. Those skilled in the art will appreciate that changes can be made to the disclosed embodiment without departing from the spirit and scope of the invention.

With reference to Figure 3, the facsimile system has a scanner 20 (a flatbed scanner or a sheet-fed scanner) with a facsimile button 21 implemented on the scanner 20, a computer 30 and a facsimile module 40. The facsimile button 21 may be a click button or a touch panel showing a button image. The computer 30 may be 20 a personal computer or a notebook, connected to the scanner 20 via a communication port and including an Internet connection, MODEM, an ISDN MODEM or other communication gateway. The facsimile module 40 includes a driver 41, a communication management program 42 for supporting the protocol of the communication gateway mentioned in the above. The protocol support includes the Internet program 43, MODEM driver 44, or ISDN program 45.

The facsimile module is stored in a media device such as a CD, a hard disk, memory module or a floppy disk and is able to be executed if the facsimile button 21 is pushed down to instruct the computer 30 to complete the facsimile.

As shown in Figure 4, the operation of the present invention is demonstrated. When the user pushes the facsimile button 21 of the scanner 20 (step 1), the facsimile system will dial a predetermined phone number or establish a connection to a predetermined email address for the email-fax gateway (step 2) . Then send the image acquired from the scanner 20 to the destination via a determined communication gateway (step 3).

Please refer to Figure 5, the step further includes determining the communication gateway (step la), establishing a connection from the communication gateway to the corresponding receiver (step ib) and scanning and acquiring the image of a document (step 1 c). Once the user pushes the facsimile button 21 of the scanner 20, the communication management program 42 of the facsimile module 40 will automatically detect the already installed communication gateway (such as the Internet connection, MODEM or ISDN) and determine the priority of each available communication gateway. The user is also able to set the predetermined communication gateway for a versatility purpose upon installation. The step lb is for establishing the connection of the available Internet program 43, MODEM driver 44,

or ISDN program 45. In step 1c, the communication management program 42 activates the driver 41, through a scanner 20 to acquire the image of a document and then store the image in a media storage as an electrical file.

As the demonstration of step 2 shown in Figure 4, the computer may pop up a window for asking the user to enter the phone number or the email address. Alternatively, there may be implemented a numeric keypad 22 on the scanner 20 for entering purposes.

In the last step 3 of Figure 4, the communication management program 42 will activate a communication subroutine to send the acquired image to the receiver via a supported connection of Internet, MODEM, ISDN or other communication gateway.

Therefore, the communication management program 42 is the core of the facsimile module 40 for the reasons that it determines the type of communication gateway, establishes the connection of the determined communication gateway, executes the scanning and acquires the image and complete the dialing if needed or sending the facsimile. In this case, the present invention eliminates the burdensome installation and activation of different application programs. Accordingly, the present invention simplifies the facsimile process and provides convenient achievements to the user.

Although preferred embodiments of the present invention have been described in the forgoing description and illustrated in the accompanying drawings, it will be understood that the invention is not limited to the embodiments disclosed, but is capable of numerous rearrangements, modifications, and substituting of parts and elements without departing from the spirit and scope of the invention. Accordingly, the present invention is intended to encompass such rearrangements, modifications, and substitutions of parts and elements as fall within the scope of the appended claims.

AMENDMENTS TO THE SPECIFICATION:

An attached copy of the specification (*excepting claims*) includes amendments made herewith. In addition, a clean copy of the specification, including the amendments made herewith, is also provided for the convenience of the Examiner.